

DETAILED ACTION

Acknowledgment

1. This Office Action is responsive to the Amendment filed on 01/03/2008.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1 and 2 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1 and 2 direct to the method steps of data manipulation using mathematical arithmetic (adding and multiplying) per se, which to convert one signal type (real signal) to another form (complex signal). Such data manipulating does not constitute statutory subject matter. See M.P.E.P. 2106 and 2106.01.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 3-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of "said threshold circuits" recited in claim 3, line 2 lacks antecedent basis.

Claims 4-9 are rejection because they are directly or indirectly depending from claim 3.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Limberg (US 6,687,313).

Regarding claims 1 and 10, Limberg, as shown in figures 6-10, teaches a method and apparatus for converting a real signal to a complex signal (output from 15) having adder for adding the signal to be converted with a signal (27). See also column 10, line 47 to column 13, line 30. Limberg fails to particularly point out that the frequency of the signal to be added is four times the frequency of the signal to be converted. However, it is just a matter of selecting the frequency to be added so that the desired I and Q of complex signal can be obtained and therefor, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Limberg by adding the signal to be converted with the signal that is four times of its frequency since it is just a matter of selecting the particular frequency as long as the I and Q of complex signal can still be obtained.

Allowable Subject Matter

8. Claims 3-9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. Claims 11-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

10. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References Lowenschuss et al (US 3,852,746) and McNeely (US 6,466,277) are cited because they are pertinent to the method and apparatus for converting real signal to complex signal.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Don N. Vo whose telephone number is (571) 272-3018. The examiner can normally be reached on Mon-Fri (9:00AM - 6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MOHAMMAD GHAYOUR can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Don N. Vo/
Primary Examiner, Art Unit 2611